



The Sky-Islands Heist

Grade 8 math · Place value, Addition, Multiplication, Rounding, Two-step equations · Reading level grades 7-9

Detective: _____ Date: _____

The floating archives of Aethelgard have been raided! The Chief Cartographer's master compass was swiped right off the drafting table. A mysterious Sky Bandit fled into the clouds, leaving behind a trail of strange energy signatures and odd gear. It is up to you to navigate the winds and track down the thief before they vanish into the sky forever.

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the Sky Bandit is _____

Possible suspects

Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY GEAR	ESCAPE TOOL	DOMINANT HAND	HAIR STYLE	VULNERABILITY
Shackleton	Anchor Boots	Hook Rope	Right Handed	Silver Hair	Magnets
Isabella	Wind Sail	Flash Powder	Right Handed	Silver Hair	Magnets
Earhart	Cloud Glider	Smoke Bomb	Right Handed	Spiky Hair	Strong Wind
Kingsley	Grapple Glove	Spy Glass	Left Handed	Braided Hair	Magnets
Valentina	Wind Sail	Spy Glass	Right Handed	Spiky Hair	Strong Wind
Magellan	Wind Sail	Spy Glass	Left Handed	Spiky Hair	Magnets
Cabot	Anchor Boots	Signal Flare	Right Handed	Silver Hair	Magnets
Yuri	Cloud Glider	Spy Glass	Left Handed	Braided Hair	Magnets
Neil	Grapple Glove	Smoke Bomb	Right Handed	Silver Hair	Magnets
Cousteau	Cloud Glider	Signal Flare	Left Handed	Silver Hair	Magnets
Lewis	Grapple Glove	Flash Powder	Left Handed	Spiky Hair	Magnets
Clark	Jet Pack	Smoke Bomb	Left Handed	Braided Hair	Strong Wind
Aldrin	Wind Sail	Flash Powder	Right Handed	Braided Hair	Strong Wind
Zheng	Grapple Glove	Spy Glass	Right Handed	Braided Hair	Strong Wind
Freya	Jet Pack	Flash Powder	Right Handed	Silver Hair	Magnets
Hudson	Wind Sail	Spy Glass	Right Handed	Braided Hair	Magnets
Marco	Grapple Glove	Smoke Bomb	Right Handed	Silver Hair	Loud Noise
Amelia	Wind Sail	Smoke Bomb	Left Handed	Silver Hair	Loud Noise
Bly	Anchor Boots	Spy Glass	Right Handed	Spiky Hair	Loud Noise
Lindbergh	Jet Pack	Hook Rope	Left Handed	Braided Hair	Strong Wind
Drake	Wind Sail	Signal Flare	Left Handed	Silver Hair	Loud Noise

CLUE 1 Place value

To unlock the bandit's encrypted flight recorder, you have to decipher the digits. Finding the digit in the hundreds place reveals the secret frequency.

Solve each problem, then write its letter in every clue box that shows the same number.

700 6000 600 30 300 9000 9000 90 300 70 80 900 600 400 70 900 700

4000 400 600 700 6000 600 6000 900 900 100 1000 900 10 600

What is the value of the 7 in 939,748? → **T**

What is the value of the 1 in 322,915? → **P**

What is the value of the 3 in 59,344? →

What is the value of the 4 in 24,966? → **U**

What is the value of the 8 in 214,089? → **D**

What is the value of the 7 in 514,875?	→	N
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What is the value of the 6 in 956,950? → **H**

What is the value of the 9 in 307,901? → ☐

What is the value of the 1 in 91,864? → **R**

What is the value of the 6 in 23,674? → **E**

What is the value of the 9 in 759,845? → **L**

What is the value of the 1 in 82,146? → **K**

What is the value of the 9 in 56,693? → **A**

What is the value of the 3 in 16,637? → **V**

What is the value of the 4 in 566,451? → **S**

Scratch space:

CLUE 2 Addition

A local sky merchant helps you tally the weights of the sky-ship fuel canisters. Adding up the logs reveals how much fuel the bandit stole.

Solve each problem, then write its letter in every clue box that shows the same number.

T																T
9657	6614	4678	3200	6344	4678	6149	4678	6614	5207	3200	8736	7835	9564	6614	9657	

						T								
6614	5207	6149	5991	4678	5991	9657	6502	6502	5389	2935	5207	8736	7479	3200

$5810 + 3847 = \square \rightarrow \text{T}$	$6182 + 3382 = \square \rightarrow \text{G}$	$5125 + 3611 = \square \rightarrow \text{R}$
$1333 + 1867 = \square \rightarrow \text{S}$	$1729 + 1206 = \square \rightarrow \text{M}$	$3601 + 2548 = \square \rightarrow \text{N}$
$2901 + 4578 = \square \rightarrow \text{K}$	$3723 + 2779 = \square \rightarrow \text{O}$	$4169 + 2445 = \square \rightarrow \text{H}$
$2796 + 3195 = \square \rightarrow \text{D}$	$1957 + 2721 = \square \rightarrow \text{E}$	$4215 + 2129 = \square \rightarrow \text{C}$
$4966 + 2869 = \square \rightarrow \text{I}$	$1741 + 3648 = \square \rightarrow \text{L}$	$2902 + 2305 = \square \rightarrow \text{A}$

Scratch space:

Multiplication facts (1-12)

You find rows of supply crates left at the abandoned camp. Multiplying the number of shelves by the boxes on each shelf gives you the total gear count.

Solve each problem, then write its letter in every clue box that shows the same number.

Diagram illustrating memory blocks and their values:

M													M				
28	100	16	64	36	36	90	10	5	100	64	2	28	64	88	100	54	

M												
28	64	5	66	100	16	54	4	54	100	72	4	36

$7 \times 4 = \boxed{} \rightarrow \boxed{\mathbf{M}}$

$$11 \times 6 = \boxed{} \rightarrow \boxed{\text{N}}$$

$8 \times 11 = \boxed{} \rightarrow \boxed{\text{K}}$

$10 \times 10 = \square \rightarrow \mathbf{E}$

$9 \times 10 = \boxed{} \rightarrow \boxed{\text{I}}$

$6 \times 12 = \square \rightarrow \mathbf{F}$

$1 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{R}}$

$$8 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{T}}$$

$8 \times 8 = \square \rightarrow \boxed{\mathbf{A}}$

$1 \times 4 = \square \rightarrow \boxed{\mathbf{U}}$

$$5 \times 2 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$5 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{G}}$$

$9 \times 6 = \square \rightarrow \boxed{\mathbf{S}}$

$$6 \times 6 = \boxed{} \rightarrow \boxed{\text{L}}$$

Scratch space:

CLUE 4 Rounding

The radar scanner on your airship is glitching and only displays rounded numbers. You have to estimate the distance to the hideout by rounding to the nearest ten.

Solve each problem, then write its letter in every clue box that shows the same number.

W															
130	370	9000	300	2000	20	7000	3000	200	430	5000	3000	20	7000	300	9000
200	170	700	1700	370	5000	90	3000	170	5000						

Round 132 to the nearest ten → **W**

Round 1,708 to the nearest hundred → **V**

Round 169 to the nearest ten → **I**

Round 8,687 to the nearest thousand → **F**

Round 87 to the nearest ten → **H**

Round 2,308 to the nearest thousand → **U**

Round 373 to the nearest ten → **E**

Round 23 to the nearest ten → **N**

Round 6,704 to the nearest thousand → **D**

Round 735 to the nearest hundred → **L**

Round 5,134 to the nearest thousand → **R**

Round 199 to the nearest hundred → **S**

Round 2,529 to the nearest thousand → **A**

Round 282 to the nearest hundred → **O**

Round 431 to the nearest ten → **T**

Scratch space:

CLUE 5**Two-step equations - the last clue**

The bandit's speed trap has a fixed starting distance plus a constant rate of travel. Solve the equation to figure out how many seconds they have been flying.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

$5x + 3 = 18, x = \boxed{}$

$4x + 6 = 10, x = \boxed{}$

$6x + 8 = 80, x = \boxed{}$

$6x + 1 = 43, x = \boxed{}$

$5x + 2 = 42, x = \boxed{}$

$4x + 9 = 53, x = \boxed{}$

$3x + 3 = 18, x = \boxed{}$

$6x + 2 = 26, x = \boxed{}$

$2x + 1 = 13, x = \boxed{}$

$5x + 2 = 52, x = \boxed{}$

$2x + 10 = 14, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain leaps across the canyon gap, then drops a decoy map to escape.
2. The villain zooms past the guard towers, then scrambles the navigation beacons.
3. The villain swings from the floating docks, then vanishes into the mist with the loot.
4. The villain glides through the vapor barriers, then vanishes into the mist with the loot.
5. The villain zooms past the guard towers, then vanishes into the mist with the loot.
6. The villain anchors onto the cargo vessel, then scrambles the navigation beacons.
7. The villain leaps across the canyon gap, then slips past the cloud patrol.
8. The villain swings from the floating docks, then drops a decoy map to escape.
9. The villain anchors onto the cargo vessel, then snatches the golden compass.
10. The villain anchors onto the cargo vessel, then drops a decoy map to escape.
11. The villain anchors onto the cargo vessel, then vanishes into the mist with the loot.
12. The villain glides through the vapor barriers, then drops a decoy map to escape.

Answer Key

The Sky-Islands Heist

Culprit: Cabot

Anchor Boots · Signal Flare · Right Handed · Silver Hair · Magnets

Trail: Start 21 → Clue 1 19 → Clue 2 11 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE THE HOOK ROPE"

What is the value of the 7 in 939,748? = 700 (T) · What is the value of the 1 in 322,915? = 10 (P) · What is the value of the 3 in 59,344? = 300 (I) · What is the value of the 4 in 24,966? = 4000 (U) · What is the value of the 8 in 214,089? = 80 (D) · What is the value of the 7 in 514,875? = 70 (N) · What is the value of the 6 in 956,950? = 6000 (H) · What is the value of the 9 in 307,901? = 900 (O) · What is the value of the 1 in 91,864? = 1000 (R) · What is the value of the 6 in 23,674? = 600 (E) · What is the value of the 9 in 759,845? = 9000 (L) · What is the value of the 1 in 82,146? = 100 (K) · What is the value of the 9 in 56,693? = 90 (A) · What is the value of the 3 in 16,637? = 30 (V) · What is the value of the 4 in 566,451? = 400 (S)

Clue 2 (Addition): "THE SCENE HAS RIGHT HANDED TOOL MARKS"

$5810 + 3847 = 9657$ (T) · $6182 + 3382 = 9564$ (G) · $5125 + 3611 = 8736$ (R) · $1333 + 1867 = 3200$ (S) · $1729 + 1206 = 2935$ (M) · $3601 + 2548 = 6149$ (N) · $2901 + 4578 = 7479$ (K) · $3723 + 2779 = 6502$ (O) · $4169 + 2445 = 6614$ (H) · $2796 + 3195 = 5991$ (D) · $1957 + 2721 = 4678$ (E) · $4215 + 2129 = 6344$ (C) · $4966 + 2869 = 7835$ (I) · $1741 + 3648 = 5389$ (L) · $2902 + 2305 = 5207$ (A)

Clue 3 (Multiplication facts (1-12)): "METALLIC GEAR MAKES MAGNETS USEFUL"

$7 \times 4 = 28$ (M) · $11 \times 6 = 66$ (N) · $8 \times 11 = 88$ (K) · $10 \times 10 = 100$ (E) · $9 \times 10 = 90$ (I) · $6 \times 12 = 72$ (F) · $1 \times 2 = 2$ (R) · $8 \times 2 = 16$ (T) · $8 \times 8 = 64$ (A) · $1 \times 4 = 4$ (U) · $5 \times 2 = 10$ (C) · $5 \times 1 = 5$ (G) · $9 \times 6 = 54$ (S) · $6 \times 6 = 36$ (L)

Clue 4 (Rounding): "WE FOUND A STRAND OF SILVER HAIR"

Round 132 to the nearest ten = 130 (W) · Round 1,708 to the nearest hundred = 1700 (V) · Round 169 to the nearest ten = 170 (I) · Round 8,687 to the nearest thousand = 9000 (F) · Round 87 to the nearest ten = 90 (H) · Round 2,308 to the nearest thousand = 2000 (U) · Round 373 to the nearest ten = 370 (E) · Round 23 to the nearest ten = 20 (N) · Round 6,704 to the nearest thousand = 7000 (D) · Round 735 to the nearest hundred = 700 (L) · Round 5,134 to the nearest thousand = 5000 (R) · Round 199 to the nearest hundred = 200 (S) · Round 2,529 to the nearest thousand = 3000 (A) · Round 282 to the nearest hundred = 300 (O) · Round 431 to the nearest ten = 430 (T)

Clue 5 (Two-step equations): surviving statement is box 9 → Cabot

$5x + 3 = 18, x = 3$ · $4x + 6 = 10, x = 1$ · $6x + 8 = 80, x = 12$ · $6x + 1 = 43, x = 7$ · $5x + 2 = 42, x = 8$ · $4x + 9 = 53, x = 11$ · $3x + 3 = 18, x = 5$ · $6x + 2 = 26, x = 4$ · $2x + 1 = 13, x = 6$ · $5x + 2 = 52, x = 10$ · $2x + 10 = 14, x = 2$